

## **AMENDMENTS TO THE CLAIMS**

1. (Currently amended) An-A method of manufacturing an oxide dispersion strengthened martensitic steel excellent in high-temperature strength, said method comprising  
mixing either element powders or alloy powders and a Y<sub>2</sub>O<sub>3</sub> powder,  
subjecting the resulting powder mixture to mechanical alloying treatment in an Ar atmosphere,  
subjecting the resulting alloyed powder to hot extrusion to solidify the alloyed powder, and  
subjecting the resulting solidified material to final heat treatment involving normalizing and tempering to manufacture an oxide dispersion strengthened martensitic steel which comprises, as expressed by % by weight, 0.05 to 0.25% C, 8.0 to 12.0% Cr, 0.1 to 4.0% W, 0.1 to 1.0% Ti, 0.1 to 0.5% Y<sub>2</sub>O<sub>3</sub> with the balance being Fe and unavoidable impurities and in which Y<sub>2</sub>O<sub>3</sub> particles are dispersed in the steel, characterized in that  
wherein the oxide particles are finely dispersed and highly densified by adjusting the Ti content within the range of 0.1 to 1.0 % so that an excess oxygen content Ex.O in the steel satisfies [0.22 × Ti (% by weight) < Ex.O (% by weight) < 0.46 × Ti (% by weight)], the excess oxygen content Ex.O being a value obtained by subtracting an oxygen content in Y<sub>2</sub>O<sub>3</sub> from an oxygen content in the steel.
  
2. (Currently amended) A method of manufacturing an oxide dispersion strengthened martensitic steel excellent in high-temperature strength, said method comprising subjecting  
mixing either element powders or alloy powders and a Y<sub>2</sub>O<sub>3</sub> powder, to mechanical alloying treatment in an Ar atmosphere  
subjecting the resulting powder mixture to mechanical alloying treatment in an Ar atmosphere,  
subjecting the resulting alloyed powder to hot extrusion to solidify the alloyed powder, and

subjecting the resulting solidified material to final heat treatment involving normalizing and tempering to manufacture an oxide dispersion strengthened martensitic steel which comprises, as expressed by % by weight, 0.05 to 0.25% C, 8.0 to 12.0% Cr, 0.1 to 4.0% W, 0.1 to 1.0% Ti, 0.1 to 0.5%  $\text{Y}_2\text{O}_3$  with the balance being Fe and unavoidable impurities and in which  $\text{Y}_2\text{O}_3$  particles are dispersed in the steel, characterized in that

wherein an Ar gas having a purity of not less than 99.9999 % is used as the Ar atmosphere so that an excess oxygen content Ex.O in the steel satisfies  $[0.22 \times \text{Ti} (\% \text{ by weight}) < \text{Ex.O} (\% \text{ by weight}) < 0.46 \times \text{Ti} (\% \text{ by weight})]$ , the excess oxygen content Ex.O being a value obtained by subtracting an oxygen content in  $\text{Y}_2\text{O}_3$  from an oxygen content in the steel.

3. (Currently amended) A method of manufacturing an oxide dispersion strengthened martensitic steel excellent in high-temperature strength, said method comprising subjecting

mixing either element powders or alloy powders and a  $\text{Y}_2\text{O}_3$  powder, to mechanical alloying treatment in an Ar atmosphere subjecting the resulting powder mixture to mechanical alloying treatment in an Ar atmosphere, subjecting the resulting alloyed powder to hot extrusion to solidify the alloyed powder, and

subjecting the resulting solidified material to final heat treatment involving normalizing and tempering to manufacture an oxide dispersion strengthened martensitic steel which comprises, as expressed by % by weight, 0.05 to 0.25% C, 8.0 to 12.0% Cr, 0.1 to 4.0% W, 0.1 to 1.0% Ti, 0.1 to 0.5%  $\text{Y}_2\text{O}_3$  with the balance being Fe and unavoidable impurities and in which  $\text{Y}_2\text{O}_3$  particles are dispersed in the steel, characterized in that

wherein a stirring energy during the mechanical alloying treatment decreases to suppress oxygen contamination during stirring so that an excess oxygen content Ex.O in the steel satisfies  $[0.22 \times \text{Ti} (\% \text{ by weight}) < \text{Ex.O} (\% \text{ by weight}) < 0.46 \times \text{Ti} (\% \text{ by weight})]$ , the excess oxygen content Ex.O being a value obtained by subtracting an oxygen content in  $\text{Y}_2\text{O}_3$  from an oxygen content in the steel.

4. (Currently amended) A method of manufacturing an oxide dispersion strengthened martensitic steel excellent in high-temperature strength, said method comprising subjecting

mixing either element powders or alloy powders and a  $\text{Y}_2\text{O}_3$  powder, to mechanical alloying treatment in an Ar atmosphere subjecting the resulting powder mixture to mechanical alloying treatment in an Ar atmosphere,

subjecting the resulting alloyed powder to hot extrusion to solidify the alloyed powder, and

subjecting the resulting solidified material to final heat treatment involving normalizing and tempering to manufacture an oxide dispersion strengthened martensitic steel which comprises, as expressed by % by weight, 0.05 to 0.25% C, 8.0 to 12.0% Cr, 0.1 to 4.0% W, 0.1 to 1.0% Ti, 0.1 to 0.5%  $\text{Y}_2\text{O}_3$  with the balance being Fe and unavoidable impurities and in which  $\text{Y}_2\text{O}_3$  particles are dispersed in the steel, characterized in that

wherein a metal Y powder or a  $\text{Fe}_2\text{Y}$  powder is used in place of the  $\text{Y}_2\text{O}_3$  powder so that an excess oxygen content Ex.O in the steel satisfies  $[0.22 \times \text{Ti} (\%) \text{ by weight}] < \text{Ex.O} (\%) \text{ by weight} < 0.46 \times \text{Ti} (\%) \text{ by weight}]$ , the excess oxygen content Ex.O being a value obtained by subtracting an oxygen content in  $\text{Y}_2\text{O}_3$  from an oxygen content in the steel.

5. (New) A method of manufacturing an oxide dispersion strengthened martensitic steel excellent in high-temperature strength, said method comprising

mixing either element powders or alloy powders and a  $\text{Y}_2\text{O}_3$  powder, subjecting the resulting powder mixture to mechanical alloying treatment in an Ar atmosphere,

subjecting the resulting alloyed powder to hot extrusion to solidify the alloyed powder, and

subjecting the resulting solidified material to final heat treatment involving normalizing and tempering to manufacture an oxide dispersion strengthened martensitic steel which comprises, as expressed by % by weight, 0.05 to 0.25% C, 8.0 to 12.0% Cr,

0.1 to 4.0% W, 0.1 to 1.0% Ti, 0.34 to 0.5%  $\text{Y}_2\text{O}_3$  with the balance being Fe and unavoidable impurities and in which  $\text{Y}_2\text{O}_3$  particles are dispersed in the steel,

wherein the oxide particles are finely dispersed and highly densified by adjusting the Ti content within the range of 0.1 to 1.0% so that an excess oxygen content Ex.O in the steel satisfies  $[0.22 \times \text{Ti} (\% \text{ by weight}) < \text{Ex.O} (\% \text{ by weight}) < 0.46 \times \text{Ti} (\% \text{ by weight})]$ , the excess oxygen content Ex.O being a value obtained by subtracting an oxygen content in  $\text{Y}_2\text{O}_3$  from an oxygen content in the steel.